Long division for polynomials works in much the same way:

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| First, I set up the division:  For the moment, I'll ignore the other terms and look just at the leading *x* of the divisor and the leading *x*2 of the dividend. | Set up the division |
| If I divide the leading *x*2 inside by the leading *x* in front, what would I get? I'd get an *x*. So I'll put an *x* on top: | Put the 'x' up top |
| Now I'll take that *x*, and multiply it through the divisor, *x* + 1. First, I multiply the *x* (on top) by the *x* (on the "side"), and carry the *x*2 underneath: | Carry the 'x^2' down |
| Then I'll multiply the *x* (on top) by the 1 (on the "side"), and carry the 1*x* underneath: | Carry the '1x |
| Then I'll draw the "equals" bar, so I can do the subtraction.  To [subtract](http://www.purplemath.com/modules/polyadd2.htm) the polynomials, I *change all the signs* in the second line... | Change signs |
| ...and then I add down. The first term (the *x*2) will cancel out: | Subtract |
| I need to remember to carry down that last term, the "subtract ten", from the dividend: | Carry down the '–10' |
| Now I look at the *x* from the divisor and the new leading term, the –10*x*, in the bottom line of the division. If I divide the –10*x* by the *x*, I would end up with a –10, so I'll put that on top: | Put '–10' up top |
| Now I'll multiply the –10 (on top) by the leading *x* (on the "side"), and carry the –10*x* to the bottom: | Carry the '–10x' down |
| ...and I'll multiply the –10 (on top) by the 1 (on the "side"), and carry the –10 to the bottom: | Carry the '–10' down |
| I draw the equals bar, and *change the signs* on all the terms in the bottom row: | Change the signs |
| Then I add down: | Subtract |

Then the solution to this division is: ***x* – 10**